*All dollar amounts in thousands*

# Activity: Line Item Construction and Maintenance

**Activity Summary**

| Program Component | FY 2005 Actual | FY 2006 Estimate | FY 2007 Fixed Costs & Related Changes | FY 2007 Program Changes (+/-) | FY 2007 Budget Request | Change From 2006 (+/-) |
|---|---|---|---|---|---|---|
| Line Item Construction and Maintenance | 233,096 | 214,890 | 0 | -92,959 | 121,931 | -92,959 |
| **Total Requirements** | **233,096** | **214,890** | **0** | **-92,959** | **121,931** | **-92,959** |

*FY 2006 amount includes $17.0 million in prior year balances transferred from Federal Land Acquisition.*

## Activity Overview

The National Park Service Line Item Construction and Maintenance Program provides for the construction, rehabilitation, and replacement of those facilities needed to accomplish the management objectives approved for each park using a two-tier priority system that maximizes construction investments. The first tier assesses and prioritizes improvements related to health and safety, resource protection, maintenance needs, and visitor services. High priority projects in the first tier are then ranked using Choosing-By-Advantage methodology to evaluate the relative benefits provided by individual projects, and projects are scored according to the Department's Five-Year Deferred Maintenance and Capital Improvement Plan criteria. The NPS incorporates a facility condition index (FCI) and the asset priority index (API) which measures the facility's importance to the mission of a park to ensure that its capital asset investments are made as efficiently as possible. This allows NPS to benchmark improvements on individual assets, and measure improvements at the individual asset level, park level, and national level.

## Justification of 2007 Program Changes

The 2007 budget request for the Line Item Construction and Maintenance program is $121.931 million.

**Focus Line-Item Construction on Deferred Maintenance: -$92.959 million**
Within available resources, the NPS proposes to focus line item construction on deferred maintenance projects to improve the condition of the Service's highest priority assets. This will aid in maintaining the Facility Condition Index at the current levels Servicewide. This estimate uses the same assumptions used in the President's 2006 budget which assumes no deterioration in the condition of NPS assets since the 2004 baseline, that all NPS deferred maintenance funding is allocated only to the eight industry standard assets, and that no additional deficiencies are identified as a result of the comprehensive condition assessments due to be completed by the end of FY 2006.

Program Performance Change Table

| ***Total Performance Change*** | | | | | |
|---|---|---|---|---|---|
| | ***A*** | ***B*** | ***C*** | ***D=B+C*** | ***E*** |
| | ***Overall Performance Changes from 2006 to 2007*** | | | | |
| **Measure** | **2006 Enacted Performance** | **Base Performance Change** | **2007 Impact of Program Change on Performance** | **2007 Budget Request Performance** | **Out-year Impact of 2007 Program Change on Performance** |
| Proposed Construction Projects | 45 proposed | 45 | -25 | 20 | Number of projects will remain at decreased level |

## FY 2007 Program Overview and Performance

Based on the latest physical inventory data available, the National Park System contains approximately 18,000 buildings; 4,246 housing units (approximately 1,000 of which are classified as historic); 5,456

paved miles of public park roads; 6,544 miles of unpaved roads; approximately 15,000 miles of paved and unpaved trails; over 1,700 campgrounds and picnic areas; over 1,800 road and trail bridges and tunnels; 1,336 water systems; 1,527 wastewater systems; 403 electrical systems; and numerous monuments, signs, amphitheaters, fortifications, ruins, airfields, and other special features. Without the construction activity, access to park areas, the preservation and rehabilitation of historic and archeological structures, the construction of park recreation and operational facilities–such as museums and other interpretive structures, and the provisions of safe and sanitary water and sewer systems, would be impossible. Projects are also programmed to protect the existing Federal investment in such facilities through reconstruction and rehabilitation projects and to restore lands to natural conditions through the removal of outdated or excess facilities.

**Facility Condition Index:** Line Item Construction prioritization is an evolving process. Currently the National Park Service (NPS) uses a two tier priority system to maximize its construction investments. The first tier of evaluation factors assesses improvements related to health and safety, resource protection, maintenance needs, and visitor services. Projects demonstrating high priorities in the first tier are then ranked using Choosing-By-Advantage methodology to evaluate the relative benefits provided by individual projects. The NPS has recently completed condition assessments for most of its facilities, and established a Facility Condition Index (FCI) for each asset. The Facility Condition Index quantifies the condition of a structure by dividing the estimated amount needed to correct its deferred maintenance backlog by its current estimated replacement value. To ensure that its capital asset investments are made as efficiently as possible, the NPS is incorporating FCI analysis into the prioritization process by comparing the existing FCI of a facility against the proposed FCI after the construction investment. Based on this output, the NPS will then be able to benchmark improvements on individual assets, and measure improvements at the individual asset level, park level, and national level. The NPS also uses the asset priority index (API) to determine the relative importance of assets at each park to assist in the decision-making for the most efficient allocation of funds for construction, maintenance, and repair or rehabilitation. The API ranks shown on the FY 2007 construction project data sheets are based on a scale of 1 to 100, with 100 denoting the highest priority. A list of proposed FY 2007 line construction projects demonstrating the effects of applying the FCI follows below.

| PARK, PROJECT | PROJECT NUMBER | ESTIMATE ($000) | CURRENT FCI | POST-CONSTR FCI |
|---|---|---|---|---|
| Tuskegee Airmen – Preserve Morton Airfield, Phase 2 | 098835 | 3,388 | 0.48 | 0.00 |
| Boston NHP – Replace Barge with Accessible Ferry Landing Dock | 077430 | 1,192 | 0.19 | 0.00 |
| Wind Cave NP – Replace Deteriorated Cave Lighting System | 092497 | 2,965 | 0.86 | 0.00 |
| Redwood NP – Protect Park Resources by Removing Failing Roads | 059730 | 2,255 | 0.77 | 0.00 |
| Mount Rainier NP – Rehab Failing Structural Components of Paradise Inn, Phase II | 006215 | 8,084 | 0.68 | 0.06 |
| Hawaii Volcanoes NP – Replace Noncompliant Cesspools. | 086980 | 4,319 | 1.00 | 0.10 |

With the funding expected through FY 2010, the NPS will bring most of its asset portfolio into acceptable condition overall, as measured by the Facility Condition Index.

**Capital Asset Planning:** The Service has implemented Capital Asset Plans (CAP) for major line item construction projects. Information in the CAP is used to track the performance of projects against the approved baselines and Servicewide goals. Each CAP contains a section listing specific Servicewide goals to be accomplished by the project. Projects failing to meet quarterly baseline goals are identified and appropriate steps are implemented to improve project performance.

**Facility Modeling Program:** In FY 2004, the Service completed initial development of all major facility models including maintenance facilities and visitor centers. The models provide the Service with guidelines for acceptable building sizing and site development of these facilities. Cost estimating for facilities sized with the facility modeling program is done by the Servicewide Cost Estimating Software System (CESS).

**5-Year Deferred Maintenance and Capital Improvement Plan:** The National Park Service has developed a comprehensive plan to identify projects of the greatest need in priority order, with special focus on critical health and safety and critical resource protection. Limited changes to the list are made annually to factor in Congressional appropriations and changing situations in the field. Examples of circumstances that could change the list are maintenance/construction emergencies from severe storm damage, descriptions of work that change as a result of condition assessments (e.g., the scraping of boards for repainting reveal extensive wood deterioration requiring complete replacement), or identification of a failing sewer system. The Service is also placing greater emphasis on developing projects to improve structural fire protection and incorporating these projects into the Five-Year Deferred Maintenance and Capital Improvement Plan. A summary table of the Five-Year Line Item Construction Plan (FY 2007 - 2011) and complete project descriptions of the FY 2007 construction projects are provided in this submission. The FY 2007 – 2011 construction project description sheets are to be provided in a separate volume. The FY 2007 deferred maintenance project descriptions and lists, showing all Repair and Rehabilitation projects for the Five-Year Plan (FY 2007 – 2011), are also provided in a companion volume.

All eligible NPS line item construction projects are scored according to the Department of the Interior priority system that gives the highest scores, and paramount consideration for funding, to those projects that will correct critical heath and safety problems, especially if the project involves the repair of a facility for which corrective maintenance had been deferred. The following are the weighted ranking criteria, in priority order: Critical Health and Safety Deferred Maintenance need, Critical Health and Safety Capital Improvement need, Critical Resource Protection Deferred Maintenance need, Critical Resource Protection Capital Improvement need, Critical Mission Deferred Maintenance need, Compliance and Other Deferred Maintenance need, and Other Capital Improvement need. These scores, and the criteria against which they are rated, are shown on the justification for each line time construction project.

Based on the weighting factors accompanying each category listed above, projects are scored with a weighted score not to exceed 1,000 points. Then these rankings are banded into the following categories: 800-1,000 points; 500-800 points; and 0-500 points. Urgent life safety/deferred maintenance projects are included in the highest band. The NPS also uses a comparative factor analysis to evaluate projects within each band. This process assists in determining the priorities and phasing of projects within each band.

**Servicewide Development Advisory Board:** The Servicewide Development Advisory Board (DAB), created in March 1998, ensures that Servicewide development strategies are met in a sustainable and cost-efficient context. The DAB consists of four Associate Directors, three Regional Directors, two park superintendents, and is supported by professional staff. Associated with, and participating in all DAB meetings are non-NPS Advisors who bring an external prospective to the process. Projects reviewed by the Development Advisory Board include: line item construction projects; large recreation fee projects; road improvement projects involving realignment, new construction or extensive reconstruction; partnership projects including major Concessioner developments inside parks; and unique construction activities.

The DAB holds meetings throughout the year. Projects presented are reviewed for technical requirements, sustainability, value-based decision making, and policy guidelines. The DAB reviews have resulted in extensive use of value analysis in the early planning/design phases of all projects. The application of value analysis principles has resulted in significant cost avoidance and improved benefits reducing individual project costs as they proceed through the design process.

The FY 2007 National Park Service Line Item Construction request represents a $90.430 million decrease from the program for FY 2006. The line item construction program continues to be a major part

*All dollar amounts in thousands*

of the President's initiative to reduce Servicewide backlogged infrastructure needs. The FY 2007 Line Item Construction and Maintenance Projects list consists of 22 projects in 19 National Park System areas. These projects are listed alphabetically by park on the following chart, the *FY 2007 Comprehensive Construction Table*. Following the individual *Project Data Sheets* is the *Five-Year Maintenance and Capital Improvement Plan*.

## FY 2006 Planned Program Performance

**Obligation rates**: Completion of design development, construction advertising and construction award is the linchpin by which specific NPS goals for Resource Protection, Recreation, and Serving Communities are accomplished through the Line Item Construction and Maintenance Program (LICP). The goal for the LICP is:

- Complete pre-design activities and Development Advisory Board review for each project prior to including the project in the NPS LICP budget submittal.
- Complete design development activities for 100% of LICP projects prior to the first quarter of the fiscal year the project is scheduled for construction.
- Achieve a Servicewide obligation rate of at least 55%.

**Cost Estimating:** Increase the use of new construction cost estimating software by requiring that all new projects prioritized in the five - year construction project list have a construction cost estimate generated by the new NPS cost estimating software. Provide training and cost estimating support data to A&E consultants to allow them to improve accuracy for midlevel and final cost estimates.

**Facility size:** Increase use of the NPS facility modeling program to accurately predict building size, and associated site improvements. When a facility has a modeling program, the results of the model are submitted and reviewed as part of the DAB review process.

**Meeting Missions Goals:** Mission goals and other project specific goals, such as Facility Condition Index goals, are established for each LICP construction project at the time of formulation into the NPS Project Management Information System (PMIS). NPS Mission and Departmental goals for each LICP project will be tracked and evaluated against the stated goals twice during the design development process. The first check will be during DAB review, and the second check will be at the end of design development prior to construction advertisement. Reporting to specific goals will be by Parks, and at the end of construction.

## FY 2005 Program Performance Accomplishments

**Obligation Rate:** The obligation rate is used as a benchmark to determine the effectiveness of the Service in implementing its line item program. It is calculated based on the total funds obligated in any year against the total funds available (both current and prior year). The ability to obligate funds is affected by many variables including the level of planning that has been accomplished, where the project is currently scheduled at the time of appropriation, the complexity and sequencing requirements of the project, local and national economic and market conditions, etc. The rate has been steadily improving since FY 1999 as follows:

| | | | |
|---|---|---|---|
| FY 1999 – 40% | FY 2000 – 47% | FY 2001 – 44% | FY 2002 – 49% |
| FY 2003 – 51% | FY 2004 – 53% | FY 2005 – 55% | |

**Facility Modeling Program:** Facility modeling programs were completed for most NPS major facilities and were distributed to the field for use in sizing building, determining site improvements, and setting target cost values.

The NPS continued to use value based decision techniques to assure the Line Item Construction Program, as well as other programs, represents best value and sound decision making throughout each project. Using these techniques was expanded in the area of planning and broke ground by using them on administrative projects. In FY 2005 the NPS conducted approximately 75 value analyses/engineering

studies producing approximately a total of $20.0- $25.0 million in cost avoidance. The program continues to reap cost avoidance of approximately twenty dollars returned for every dollar invested in a value analysis study.

The role of the DAB was expanded to also serve as the NPS Investment Review Board for capital construction investments. This expanded role for the DAB meets the requirements of the Capital Planning and Investment Control guidelines issued by the Department of the Interior. As the Investment Review Board, the DAB will be involved in developing long range capital construction investment goals and implementing those goals through the various NPS capital construction funding programs, including Line Item Construction and Maintenance.